

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Previously Presented) A display using a photoluminescence quenching device, comprising:

a substrate with a plurality of sub-pixels arranged on at least a first side of the substrate, wherein a sub-pixel comprises: a first electrode having a first polarity, a second electrode having a second polarity, and an emitter layer, wherein the emitter layer is interposed between the first electrode and the second electrode;

an excitation light source for projecting light to the emitter layer;

a photoluminescence light emitted from the emitter layer; and

an electrical field formed between the first electrode and the second electrode which controllably quenches the photoluminescence light from the emitter layer.

2. (Original) The display of claim 1, wherein the excitation light source is arranged to project light on a second side of the substrate, the substrate is formed of a transparent material, the first electrode is adjacent to the first side of the substrate, the first electrode is formed of a transparent material, and the second electrode is formed of a light-reflecting material.

3. (Original) The display of claim 1, wherein the excitation light source is arranged to project light on the first side of the substrate, the first electrode is adjacent to the first side of the substrate and is formed of a light-reflecting material, and the second electrode is formed of a transparent material.

4. (Original) The display of claim 1, wherein the excitation light source is arranged to project light on the first side of the substrate, the substrate is formed of a light-reflecting material, and the first electrode and the second electrode are formed of a transparent material.

5. (Original) The display of claim 1, wherein the excitation light source is arranged to project light on the first side of the substrate, the substrate is formed of a transparent material, and, a dielectric mirror is arranged on the sub-pixels, wherein light which is emitted from the excitation light source passes through the dielectric mirror and the dielectric mirror reflects light emitted from the emitter layer, and the first electrode and the second electrode are formed of a transparent material.

6. (Original) The display of claim 1, wherein the excitation light source is arranged to project light on a second side of the substrate, the substrate is formed of a transparent material, and a dielectric mirror is arranged between the sub-pixels and the substrate, wherein light which is emitted from the excitation light source passes through the dielectric mirror and the dielectric mirror reflects the light emitted from the emitter layer, and the first electrode and the second electrode are formed of a transparent material.

7. (Previously Presented) The display of claim 1, wherein the photoluminescence quenching device includes at least one of a photoluminescence mode where a signal voltage is converted into an electromagnetic wave and a photoluminescence quenching mode where emission of light caused by photoluminescence is controllably quenched.

8. (Previously Presented) The display of claim 1, wherein the emitter layer is formed of at least one of a low molecular organic material, and a light-emitting polymer, wherein the light-emitting polymer is one of polyphenylene vinylene and polyfluorene.

9. (Original) The display of claim 1, wherein a hole transport layer is interposed between the first electrode and the emitter layer, the first electrode is an anode and the hole transport layer is formed of at least one of polyethylene dioxy thiophene, polystyrene sulfone acid, and polyaniline.

10. (Previously Presented) The display of claim 1, wherein the excitation light source is a lamp which emits blue light and ultraviolet rays.

11. (Original) The display of claim 10, wherein the excitation light source is a mercury lamp or a xenon lamp.

12. (Original) The display of claim 1, wherein the excitation light source is an external light source located outside the display.

13. (Original) The display of claim 1, further comprising an optical unit which can adjust the light emitted from the emitter layer.

14. (Original) The display of claim 1, further comprising a screen on which an image is formed with the light emitted from the emitter layer.

15. (Original) The display of claim 5, wherein the dielectric mirror has a bandwidth narrower than a wavelength of the light emitted from the emitter layer.

16. (Original) The display of claim 6, wherein the dielectric mirror has a bandwidth narrower than a wavelength of the light emitted from the emitter layer.

17. (Original) The display of claim 5, wherein the dielectric mirror includes a plurality of refraction layers having different refractive indices.

18. (Original) The display of claim 6, wherein the dielectric mirror includes a plurality of refraction layers, the refraction layers having different refractive indices.

19. (Original) The display of claim 17, wherein a low-refractive index refraction layer of the plurality of refraction layers is formed of at least one of silicon dioxide, silicon nitride, and magnesium fluoride, and a high-refractive index refraction layer of the plurality of refraction layers is formed of at least one of titanium dioxide, tin oxide, zirconium oxide, and tantalic oxide.

20. - 24. (Canceled)